

**To:** Pachon, Carlos[Pachon.Carlos@epa.gov]  
**From:** Wells, Suzanne  
**Sent:** Fri 8/14/2015 8:05:19 PM  
**Subject:** RE: Review of mining site recommendations from our optimization reports

Thanks. I hadn't seen the action memo before.

Suzanne Wells

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**From:** Pachon, Carlos  
**Sent:** Friday, August 14, 2015 3:57 PM  
**To:** Stalcup, Dana  
**Cc:** Fitz-James, Schatzi; Barr, Pamela; Powell, Dan; Turner, Gary; Mahmud, Shahid; Gartner, Lois; Wells, Suzanne  
**Subject:** Review of mining site recommendations from our optimization reports

Hello Dana:

Dan requested I provide you with any insights we have from optimizations conducted at mining sites that might relate to the accident at Bonita/Gold King Mine. I conducted an initial analysis based on the draft report summarizing optimization reviews at mining sites (attached).

To date, optimization reviews have been initiated or completed on 16 mining sites (plus 3 at early stages). Approximately 116 recommendations were made at the 16 associated optimization reviews. Our draft report analyzes these 116 recommendations and summarizes findings, recommendations, and lessons learned. Recommendations for the following sites are summarized in the attached report:

Barker Hughesville Mine, MT

Black Butte Mine, OR

Bunker Hill Mine, ID

Carpenter Snow Creek, MT

Carson River Mercury Site, NV

Clear Creek/Central City, CO

French Gulch, CO

Gilt Edge Mine, SD

Homestake Mining Co., NM

Iron King Mine, AZ

Lava Cap Mine, CA

Silver Bow Creek/Butte Area, MT

Standard Mine, CO

Sulphur Bank Mercury Mine, CA

Summitville Mine, CO

Tar Creek, OK

**Insight:** There appears to be consistency between the recommendations from our optimization reviews and the work being conducted at Bonita/Gold King.

One of the *Common Findings* is that along with source control, acid mine drainage (AMD) water treatment is one of the most complex, costly and longest-duration remedial activities. AMD control is one of the drivers of the removal action at the Gold King mine (called Acid Rock Drainage). See the Bonita/Gold King Mine Action Memo, page 6 – Proposed Actions at <http://www2.epa.gov/sites/production/files/2015-06/documents/upper-animas-action-memo-9-24-2014.pdf>)

Another of the *Common Findings* in the draft report seems to relate to the accident at the Bonita/Gold King Mine. From Page 12 of draft mining report: “4. Insufficient AMD capture (for example, resulting from blowouts or seeps), can affect downstream water quality even when treatment systems function as planned. An important consideration for mine works flooding remedies (such as adit plugging or pit flooding) is to assess where and how blowouts or seepage will occur, and to determine how to capture those seeps. This finding was raised at the following sites: Summitville (EPA 2002), French Gulch/Wellington-Oro Mine Site Water Treatment Plant (EPA 2013c) and Bunker Hill Mining and Metallurgical Complex (EPA 2013e).”

Of the *Recommendations for Improving Effectiveness* identified in the Draft Report, it appears from the Action Memo (link above) that the Bonita/Gold King site Team was implementing an action similar to the following recommendation: “1. Balance water levels for sites with flooded mine workings to reduce uncontained seeps while keeping still exposed sulfide ores from oxidizing. Use flow-through bulkheads to plug adits so that water levels can be controlled. [Recommendation for the Standard Mine Site (EPA 2014b)]”

**Net steps:** We are starting a more detailed review of the 116 recommendations to evaluate whether specific recommendations address adit/plug/berm stability issues. Regarding the draft report, we are in discussions with Shahid on potential program actions pursuant to the recommendations in the report. Note the report was written for internal audiences but has information of value to a broader audience.

Please let us know if you need additional information.

Carlos S Pachon

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